

5,769,691. U.S. Patent No. 5,769,691, and the instant continuation application by reference, was properly assigned and recorded with the United States Patent and Trademark Office at Reel 8330, Frame 0122.

Both Patent No. 5,769,691 and the instant application are commonly owned. Accordingly, Applicant is submitting herewith a Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(b), accompanied by the appropriate fee, in order to overcome the Examiner's obviousness-type double patenting rejection.

Next, the Examiner rejected claims 4-10 under 35 U.S.C. § 103(a) as being unpatentable over *Ronay*, U.S. Patent No. 5,752,875 (hereinafter "*Ronay*"), in view of *Samuelson*, U.S. Patent No. 4,048,765 (hereinafter "*Samuelson*"). In particular, the Examiner stated that *Ronay* discloses polishing a wafer with a polyurethane pad, but not specifically a non-cellular pad, and a slurry solution of silica and a hydroxide with the claimed size range and weight percentage as Applicant's invention. The Examiner further stated that *Samuelson* teaches polishing with a non-cellular pad of non-cellular urethane that is flexible and free to deform with a workpiece, and that it therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the pad in *Ronay* with the non-cellular pad taught by *Samuelson* in order to increase the heat distortion, decrease the friction, and prevent clogging and build-up, thereby increasing pad life to 3-5 times that of other pads. Applicant respectfully traverses this rejection.

*Ronay* generally discloses "a polishing process for removing aluminum, wherein hydrated aluminum oxide on the surface of an aluminum layer chemically reacts, upon contact with solid polishing particles, thereby removing the surface hydrated aluminum hydroxide layer." (See column 3, lines 20-23.) The exposed aluminum surface reacts with the water contained in the slurry to form a new hydrated aluminum hydroxide surface layer. The surface aluminum hydroxide layer is removed layer-by-layer as it forms by forming a compound with the solid polishing particle. This eliminates scratching of the aluminum. More specifically, "the hydrated aluminum oxide A is removed from the aluminum surface 102 by inserting it (AB) into the top layer of the silica polishing particle 100. The spent polishing particle 100, with part of its surface converted to alumino-silicates

(AB), is discarded and replaced by new silica particles. So, layer-by-layer the surface alumina is removed without scratching the surface 102 or corroding the aluminum 104.” (See Fig. 2 in column 3, lines 50-57.)

In contrast, *Samuelson* teaches a polishing and finishing wheel having a matrix formed of a solid linear polyester or polyether urethane and containing a minor amount, such as from about 40 to about 90, and preferably at least 50 parts, by weight of abrasive refractory grains. (See column 7, lines 16-20.) Moreover, in forming the polishing and finishing wheel, “it is essential that the polyurethane composition has a high viscosity at the curing temperature and cures very fast so that the abrasive grains will remain evenly distributed until the degree of curing of the composition is sufficient to hold them in place. The curing agent should be selected to effect such degree of curing within a few minutes and preferably in 1-2 minutes.” (See column 7, lines 40-46.) As a result, unlike the silica polishing particles disclosed in *Ronay*, the abrasive grains disclosed in *Samuelson* are not converted to a different compound in an effort to remove material from the surface of a workpiece. Instead, the abrasive grains disclosed in *Samuelson* remain in the surface matrix of the polishing and finishing wheel, thereby coming into contact with the surface of a workpiece even after changing its composition as it is contained in the polishing and finishing wheel.

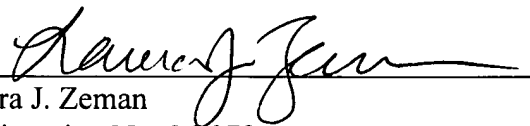
Accordingly, the *Ronay* patent reference and *Samuelson* patent reference teach away from one another, *i.e.*, the abrasive grains disclosed in *Samuelson* are configured to form a part of the permanent matrix of the polishing and finishing wheel and the solid polishing particles disclosed in *Ronay* are specifically used as part of a slurry so that they can react with the surface of the workpiece and then be discarded and/or removed and replaced with new silica polishing particles. Therefore, it would not have been obvious to one of ordinary skill in the art to substitute the pad in *Ronay* with the non-cellular pad taught by *Samuelson* which clearly contains abrasive grains in that the purpose of the invention disclosed in *Ronay* is to polish wafers by removing an aluminum layer without scratching the aluminum.

In view of the foregoing, Applicant respectfully submits that all of the pending claims are allowable over the prior art of record. Reconsideration of the application and allowance of all

pending claims is earnestly solicited. Should the Examiner wish to discuss any of the above in greater detail or deem that further amendments should be made to improve the form of the claims, then the Examiner is invited to telephone the undersigned at the Examiner's convenience.

Respectfully submitted,

Dated: October 9, 1998

  
\_\_\_\_\_  
Laura J. Zeman  
Registration No. 36,078

**SNELL & WILMER L.L.P.**  
One Arizona Center  
400 East Van Buren  
Phoenix, Arizona 85004-0001  
Telephone: (602) 382-6377  
Facsimile: (602) 382-6070